AFCARS

AFCARS Electronic Data Transmission

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AFCARS ELECTRONIC DATA TRANSMISSION			
ELECTRONIC DATA TRANSFER (EDT) METHODS	EDT TYPES	EFFICIENCY FACTORS	
		PROS	CONS
CONNECT:DIRECT formerly (Network Data Mover - NDM) (Sterling Software)	Mainframe to Mainframe	Social Security Administration data transfer system has been provided to the Child Welfare Agencies in every State States participating in the SSA/Connect:Direct system can exchange data with ACF/NCC Transmission Signaling Speed: 9600 BAUD and 56KB ACF/NCC is a network HUB and is offering technical support for this preferred mode of data transmission. Most efficient means of electronic data transmission to ACF since each State has a SPOKE capability. Minimal manual intervention States have the option to upgrade from a SPOKE to a HUB for direct transmission to NCC	Must arrange for electronic capability to transmit data from the local site to the State Connect:Direct site.

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SUPERTRACS (Sterling Software)	Mainframe to Mainframe	Allows most computer platforms to exchange data with ACF/NCC in a dial-up mode Transmission Signaling Speed: 4800 and 9600 BAUD For IBM mainframe sites, ACF/NCC will provide systems software to link to Supertracs and no additional software will need to be purchased by the remote mainframe site. Decreased amount of manual intervention involved in the transmission/reception of data	Suitable only for small to moderate 100 to 5,000 record transmissions Requires technical personnel at remote site to assemble programs and assist in installation. This is primarily an IBM compatible 3770/3780 protocol.
SIMPC (Simware Personal Computer Software)	Personal computer to Mainframe	The software will be provided by the ACF/NCC. Transmission Signaling Speed: 4800, 9600 and 19.2 BAUD Decreased amount of manual intervention involved in the transmission/reception of data If a State is currently maintaining the AFCARS data on a personal computer and is unable to download and upload to its mainframe, SIMPC electronic file transfer is an electronic transmission option to transfer the data to the ACF/NCC mainframe.	Suitable only for small to moderate 100 to 5,000 record transmissions
SIMPC (Simware Personal Computer Software)	Personal computer to Personal Computer	The software will be provided by the ACF/NCC.	Suitable only for small to moderate 100 to 5,000 record transmissions

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MITRON	Magnetic tape to Magnetic tape	Large volumes of data-greater than 5,000 records Transmission Signaling Speed: 9600 BAUD States can transmit data 24 hours a day. However, NCC operators are only available from 7AM to 5:30 PM Eastern time, Monday thru Friday	Both sender and receiver must have a Mitron tape drive Only 1 line between sending site and ACF/NCC Line noises result in multi re-transmissions for the same file Can only transfer 1 reel of tape at a time Multiple tapes must contain a header and trailer records If a file is greater than 2 tape volumes the transmission may abort leaving unpredictable results Only accepts 9 track, 1600 BPI, 2400 foot tapes Data format: EBCDIC To many chances for errors reading/sending a sequential file

The following table shows the **optimum** transfer times associated with a fixed-length record of 145 characters. These figures are based on raw data bit rates and do not take into account blocking factors, inter-record gaps, network load, network thruput capabilities, speed of PC CPU, re-transmissions, data compression capabilities and/or State specific transmission factors that can and will affect the transmitted record size, and thus alter estimated transmission time.

	TRANSMISSION BAUD RATES				
Record Size: 139 Characters	2400	4800	9600	19.2	56KB
Data Volumes	ESTIMATED TRANSMISSION TIME (Time represented in Hours and hundredths of an Hour)				
1,000	.13	.06	.03	.02	.006
10,000	1.29	.64	.32	.16	.06
25,000	3.22	1.61	.80	.40	.14
50,000	6.45	3.22	1.61	.80	.28
75,000	9.65	4.83	2.41	1.21	.41
100,000	12.87	6.44	3.22	1.61	.55
750,000	96.52	48.26	24.13	12.07	4.14

These estimated figures offer States some idea of what data transmission speeds may be experienced for varying volumes of data. Based on a State's transmission selection, hardware and software capabilities, file transfer testing will be coordinated through ACF/NCC to obtain the most accurate and efficient handling of the AFCARS data. The 750,000 figure is an estimate of the total volume of raw data and transmission time required to download one AFCARS reporting period from ACF/NCC to a State.

The advantages of Electronic File Transfer are the elimination of tapes and associated data transmission problems and the advantage of automatic record validity checking prior to the transmission session.

9600 BAUD rate and above are the most desirable, efficient and reliable transmission speeds. States are discouraged from using speeds lower than 2400 BAUD unless they have fewer than 100 records.

As an example, an ACF Project, the Federal Parent Locator Service (FPLS) currently averages monthly data transmissions of 22,000, 335 character, blocked records which takes approximately 2 hours to transmit via Mitron tapes. To transmit the same data via Connect:Direct at 19.2 BAUD would only take .85 hundredths of an hour, which results in considerable time savings by decreasing transmission by half, eliminating the use of voice "noisy" lines that cause transmissions to fail, reducing tape handling types of manual intervention, eliminating the need for special equipment, etc. involved with MITRON.

With ACF's and the States' newly acquired Connect:Direct capability, ACF is phasing out the Mitron tape method for the more desirable Connect:Direct technology that will allow faster, more accurate data transmission with a minimum of manual intervention.

NCC has agreed to work with OISM and the States in developing the most efficient mode and transmission rates to accommodate each State within reasonable NCC time and resource constraints. Therefore, ACF is recommending and encouraging States to use CONNECT:DIRECT as their electronic method.

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Foster Care Detailed Record = 145 Characters
Foster Care Summary  Record = 172 Characters
                             (317) Total Characters + *

Adoption Detailed Record    =  78
Adoption Summary  Record    = 172
                             (250) Total Characters + *

*
Foster Care Footnotes       = 253 x 10 estimated entries
Adoption    Footnotes       = 253 x 10 estimated entries


Transmission Speed Formula

        145   maximum characters per record
   x      8   number of bits per character
   =  1,160   total number of bits per record
   x          number (volume) of records transmitted
   =          total bits per transmission (all records)
   /          BAUD rate
   =          total seconds per transmission
   /     60   seconds per minute
   =          total minutes per transmission
   /     60   minutes per hour
   =          total hours and/or fractions of an hour thereof per transmission

SAMPLE:

              145
   x            8
   =        1,160
   x       75,000  volume
   =   87,000,000  total bits per volume
   /       19,200  BAUD rate
   =     4,531.25  total seconds per transmission
   /           60
   =        75.52
   /           60
   =         1.26 hours to transmit
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